

Treating panic disorder on the web

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An online treatment system for patients suffering with panic disorder and anxiety problems combine biofeedback therapy with web technologies and allows patients and medical professionals to communicate effectively, according to research published in the *International Journal of Business Intelligence and Data Mining*.

Vincent Tseng and Bai-En Shie of the National Cheng Kung University are working with psychiatrist Fong-Lin Jang of the Chi-Mei Medical Center, in Tainan, Taiwan, to develop a system they say will have a "pivotal impact" on the healthcare industry.

The increasing pace of life, the industrialisation of society, and the advent of digital technology are all thought to underlie the growing prevalence of mental illness. Disorders, such as anxiety, [obsessive-compulsive disorder](#), and depression are now diagnosed more frequently than ever before.

Panic disorders are not easily diagnosed but do represent chronic illness for countless patients and lead to hospitalisation with increasing frequency. Patients can become acutely fearful and uncomfortable and suffer dizziness, chest pain, difficulty breathing, a racing pulse, and even palpitations, all of which increase the sense of panic and mimic the symptoms of a heart attack or asthma episode, hence the emergency room admissions.

Sufferers often restrict their day to day activities to avoid inducing anxiety and the problem persists can lead to substance abuse and

depression. Victims of [panic disorder](#) often have a poor quality of life overall.

The team has coupled a wireless-enabled finger-ring device that measures skin temperature with a web-enabled system. The system provides a convenient channel for communication between patients and healthcare worker as well as allowing hospital staff to allow patients to ask questions and download pertinent information.

The key to the system is that patients can also upload physiological data and their self-assessment to the database. The "emotion ring" continuously monitors and records the patient's finger skin temperature, which the researchers explain is a useful indicator of the patient's emotional state. It may simply provide a focus. Patients are then taught muscle and mental relaxation exercises and how to observe the effects of these on their skin temperature, thus providing a biofeedback mechanism that can also be monitored by their healthcare worker.

Temperature biofeedback has been utilized in medicine for more than three decades and because performance [anxiety](#) can occur during biofeedback a professional therapist must help the patient master the sensation of relaxation, especially in the initial stages of training.

The team has tested the system with ten patients in a pilot study. "Once the patients learned the cues for relaxation and the method to obtain rapid relaxation, they were able to apply the methods and cues to relieve the symptoms of panic disorder," they conclude. The next step is to develop a related system that works with mobile devices rather than a personal computer.

"After receiving the muscle relaxation program, patients could feel the difference between relaxation and tension, and learned the skill of relaxation," Tseng says, "The most important is that patients had fewer

panic attacks and had improvement in Panic Disorder Severity Scale(PDSS). A large multi-center clinical trial with this system is going on in Taiwan."

More information: "Intelligent panic disorder treatment by using biofeedback analysis and web technologies" in Int. J. Business Intelligence and Data Mining, 2010, 5, 77-93,
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